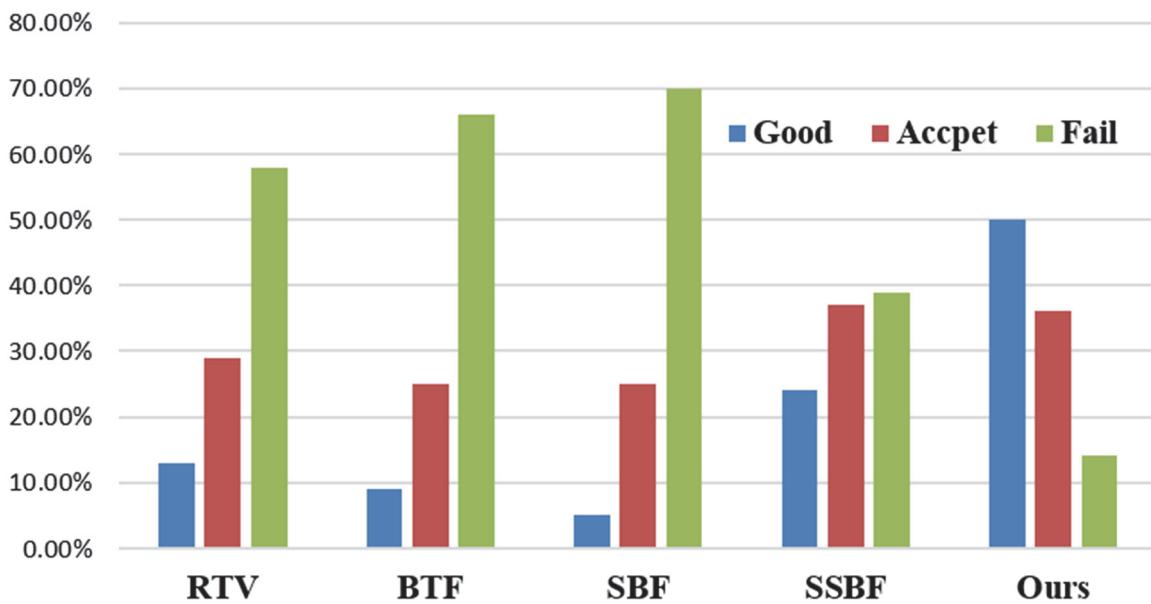


Userstudy_5

(The supplementary materials)

We made a user study by collecting some texture images from [2, 7, 11, 17] and inviting 10 users to evaluate the filtered results with the methods in comparison, as given in the following. In the user study, every user was required to mark each filtered result ‘Good’, ‘Acceptable’ or ‘Failed’ respectively, and for each filtered result, the users’ choices are summed and listed under them respectively. The overall statistics for these results are given in the following Figure, showing our potential to smooth out textures of multiple scales, preserve structure edges clearly and suppress blurring effects, superior to the methods in comparison.



- [2] **RTV:** H. Cho, H. Lee, H. Kang, and S. Lee, “Bilateral texture filtering,” ACM Trans. Graph., vol. 33, no. 4, pp. 128:1–128:8, Jul. 2014.
- [7] **SSBF:** H. Lee, J. Jeon, J. Kim, and S. Lee. Structure-texture decomposition of images with interval gradient. Comput. Graph. Forum, 36(6):262–274, 2017.
- [11] **SBF:** T.-H. Lin, D.-L. Way, Z.-C. Shih, W.-K. Tai, and C.- C. Chang, “An efficient structure-aware bilateral texture filtering for image smoothing,” Comput. Graph. Forum (Proc. Pacific Graphics’2016), vol. 35, no. 7, pp. 57–66, 2016.
- [17] **RTV:** L. Xu, Q. Yan, Y. Xia, and J. Jia, “Structure extraction from texture via relative total variation,” ACM Trans. Graph., vol. 31, no. 6, pp. 139:1–139:10, Nov. 2012.



(a) Input



(b) RTV (Good-0 Acceptable-0 Failed-10)



(c) BTF (Good-3 Acceptable-4 Failed-3)



(d) SBF (Good-0 Acceptable-0 Failed-10)



(e) SSBF (Good-3 Acceptable-4 Failed-3)



(f) Ours (Good-8 Acceptable-2 Failed-0)

Fig.1. RTV($\lambda=0.015$, $\sigma=4$); BTF($k=7$, $n_{itr}=4$); SBF($k=7$, $n_{itr}=4$); SSBF($\sigma=4$, $\sigma_s=4$); Ours($k=11$, $n_{itr}=4$).

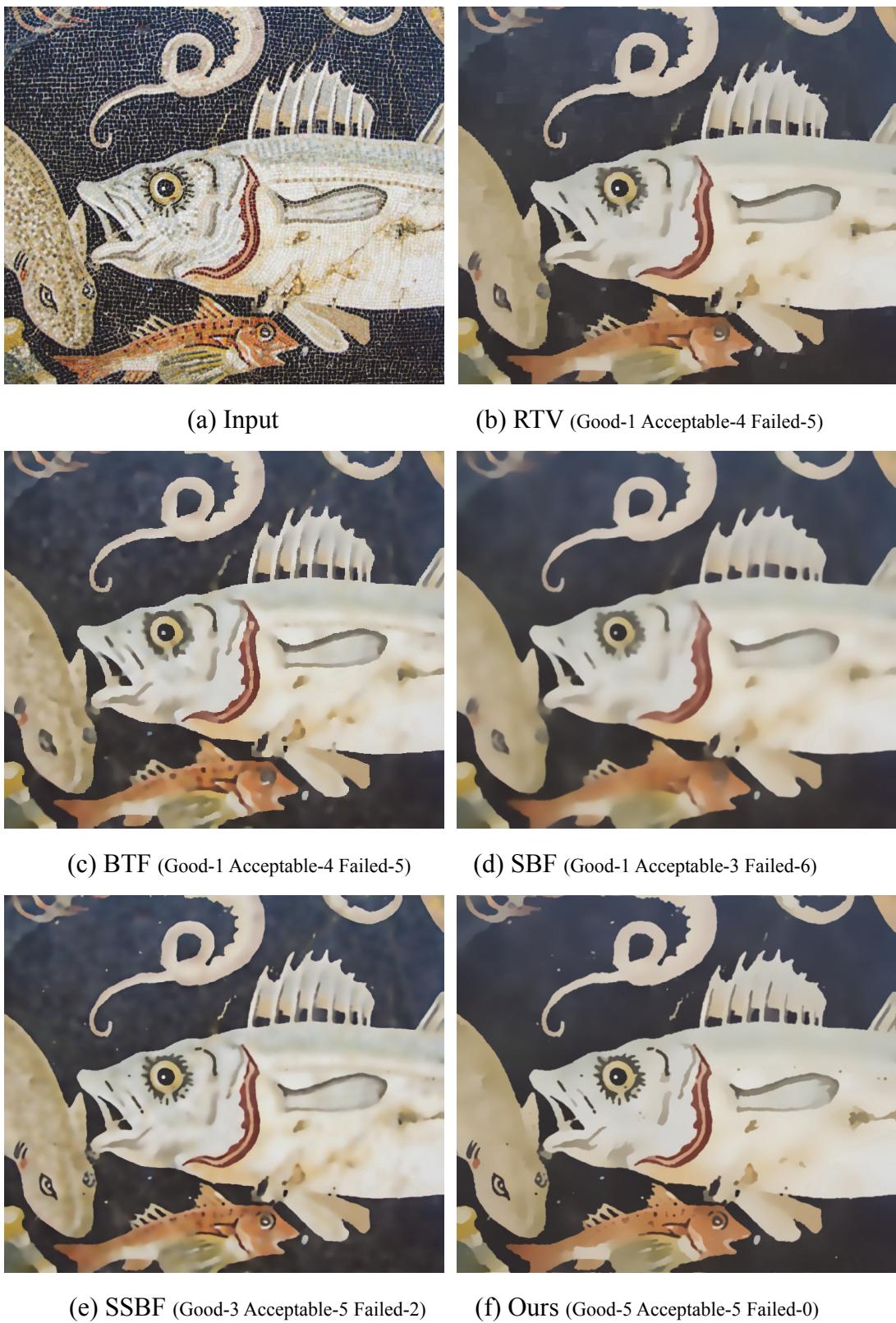


Fig.2. RTV($\lambda = 0.015$, $\sigma = 6$); BTF($k=13$, $n_{itr}=5$); SBF($k=11$, $n_{itr}=5$); SSBF($\sigma=5$, $n_{itr}=5$); Ours($k=15$, $n_{itr}=5$).



Fig.3. RTV($\lambda = 0.02$, $\sigma = 6$); BTF($k=9$, $n_{itr}=4$); SBF($k=7$, $n_{itr}=4$); SSBF($\sigma=3$, $n_{itr} = 4$); Ours($k=11$, $n_{itr} = 4$).



(a) Input



(b) RTV (Good-0 Acceptable-4 Failed-6)



(c) BTF (Good-1 Acceptable-2 Failed-7)



(d) SBF (Good-0 Acceptable-2 Failed-8)



(e) SSBF (Good-0 Acceptable-5 Failed-5)

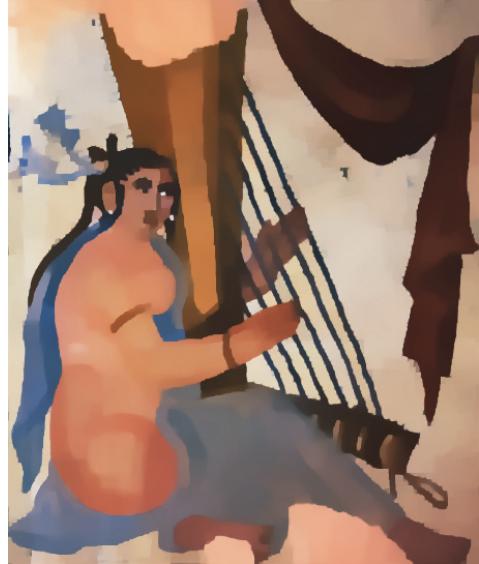


(f) Ours (Good-1 Acceptable-4 Failed-5)

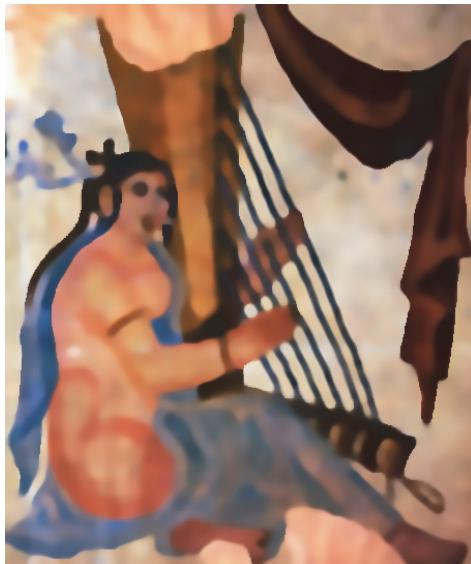
Fig.4. RTV($\lambda = 0.01$, $\sigma = 3$); BTF($k=5$, $n_{itr}=3$); SBF($k=7$, $n_{itr}=3$); SSBF($\sigma=3$, $n_{itr} = 3$); Ours($k=7$, $n_{itr} = 3$).



(a) Input



(b) RTV (Good-1 Acceptable-3 Failed-6)



(c) BTF (Good-0 Acceptable-2 Failed-8)



(d) SBF (Good-0 Acceptable-4 Failed-6)



(e) SSBF (Good-1 Acceptable-4 Failed-5)



(f) Ours (Good-2 Acceptable-5 Failed-3)

Fig.5. RTV($\lambda = 0.015$, $\sigma = 4$); BTF($k=9$, $n_{itr}=3$); SBF($k=7$, $n_{itr}=3$); SSBF($\sigma=3$, $n_{itr}=4$); Ours($k=9$, $n_{itr}=4$).



Fig.6. RTV($\lambda=0.01$, $\sigma=6$); BTF($k=9$, $n_{itr}=3$); SBF($k=7$, $n_{itr}=3$); SSBF($\sigma=3$, $n_{itr}=3$); Ours($k=9$, $n_{itr}=3$).

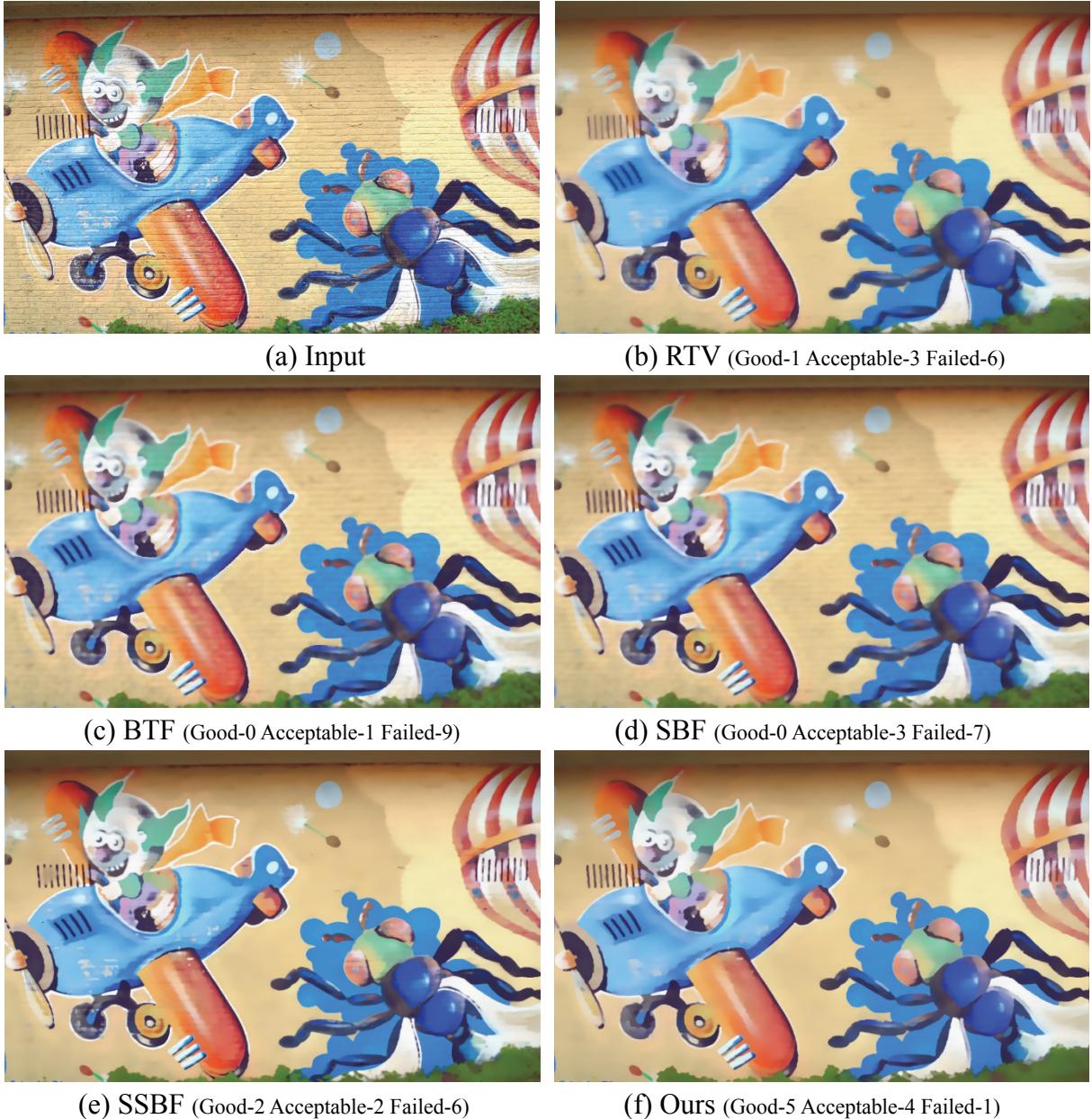


Fig.7. RTV($\lambda = 0.015$, $\sigma = 4$); BTF($k=7$, $n_{itr}=3$); SBF($k=7$, $n_{itr}=3$); SSBF($\sigma=5$, $n_{itr} = 3$); Ours($k=15$, $n_{itr} = 3$).



Fig.8. RTV($\lambda = 0.02$, $\sigma = 6$); BTF($k=9$, $n_{itr}=3$); SBF($k=9$, $n_{itr}=3$); SSBF($\sigma = 5$, $n_{itr} = 3$); Ours($k=15$, $n_{itr} = 3$).



(a) Input



(b) RTV (Good-4 Acceptable-4 Failed-2)



(c) BTF (Good-1 Acceptable-2 Failed-7)



(d) SBF (Good-0 Acceptable-2 Failed-8)



(e) SSBF (Good-4 Acceptable-3 Failed-3)



(f) Ours (Good-5 Acceptable-3 Failed-2)

Fig.9. RTV($\lambda = 0.015$, $\sigma = 6$); BTF($k=9$, $n_{itr}=3$); SBF($k=9$, $n_{itr}=3$); SSBF($\sigma=5$, $n_{itr} = 3$); Ours($k=15$, $n_{itr} = 3$).



(a) Input

(b) BTF (Good-1 Acceptable-2 Failed-7)

(c) BTF (Good-1 Acceptable-2 Failed-7)



(d) SBF (Good-1 Acceptable-3 Failed-6)

(e) SSBF (Good-2 Acceptable-4 Failed-4)

(f) BTF (Good-6 Acceptable-4 Failed-0)

Fig.10. RTV($\lambda = 0.01$, $\sigma = 6$); BTF($k=7$, $n_{itr}=4$); SBF($k=7$, $n_{itr}=4$); SSBF($\sigma=5$, $n_{itr}=3$); Ours($k=15$, $n_{itr}=3$).